South Wheatley Environmental Trust Wind Turbine Project:

An Innovation History

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Community Innovation for Sustainable Energy research team

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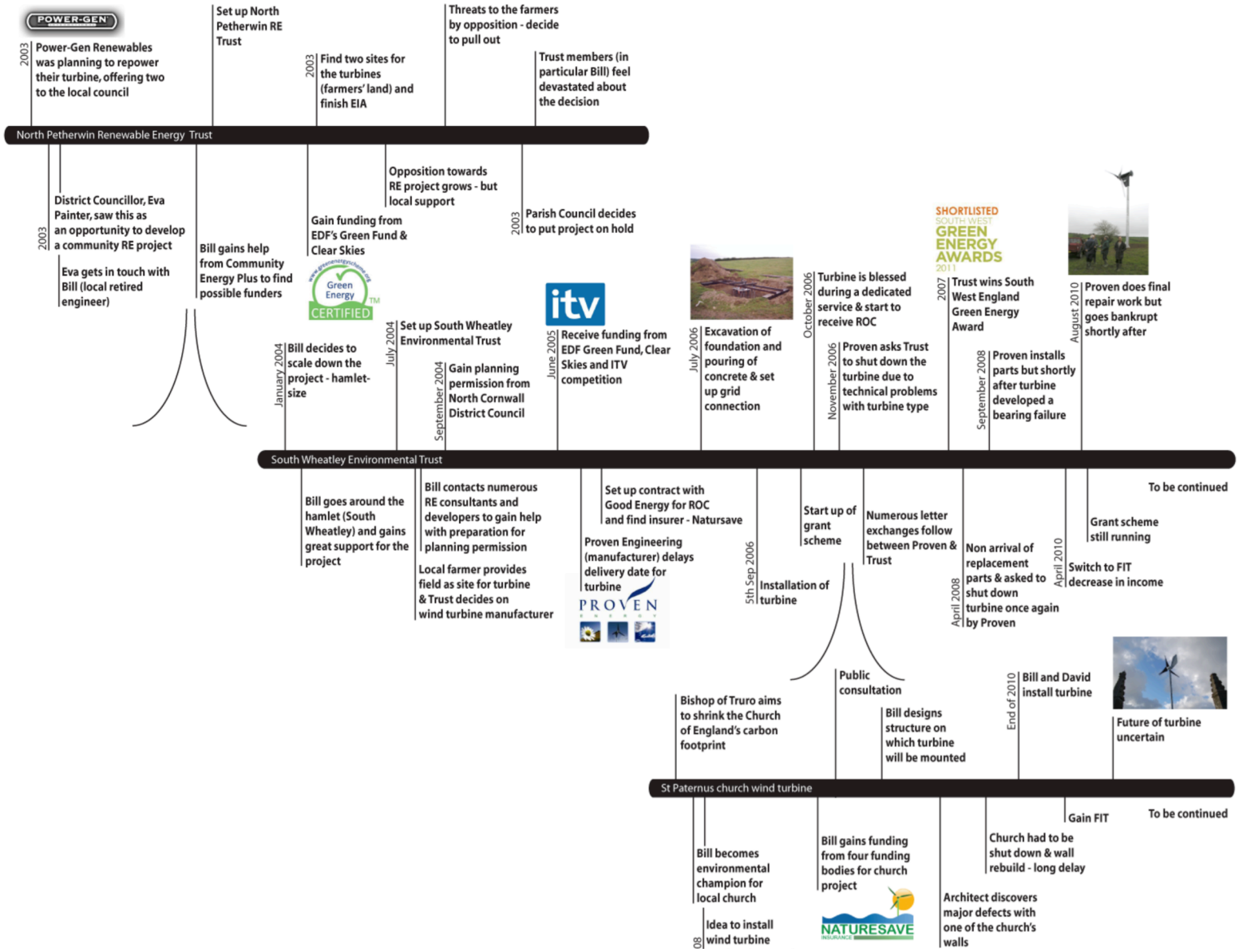
South Wheatley Environmental Trust Wind Turbine Project

The South Wheatley wind turbine is a hamlet-based community-owned renewable project located in North Cornwall (set in a labyrinth of narrow lanes near Launceston). The project is run by a Trust, to which members are elected on a yearly basis, and regularly meet up to discuss the project. The Trust has been generating energy from their 15kW wind turbine since 2007, selling it to the grid and investing the surplus in local household energy efficiency projects (run as a grant scheme), renewable energy projects and energy conservation education at local schools. This innovation history traces the development of the South Wheatley Environmental Trust wind turbine project from its conception in 2004, through its development to the turbine's installation and running phase (including numerous technical setbacks and the set-up of a grant scheme) from 2007-2012. This is a story of a pioneering individual who has been tenacious enough to set up a community-owned wind turbine project, rescuing it a few times to keep it going.

Key Insights

For the Community Innovations for Sustainable Energy (CISE) project, the South Wheatley wind turbine project is particularly interesting because, through an individual's pioneering idea to set up a community-owned renewable energy project in 2002, it reveals a number of issues that appear to be important to how community energy projects may grow and diffuse. In particular:

- It reveals that although community energy groups are keen to share lessons, the setting up of institutional infrastructures that aid the sharing of those lessons is not always a straightforward process. Some groups might be worried about publicising their work because of a potential backlash against their project.
- It demonstrates that groups sometimes have to scale down their project to succeed (rather than growing and spreading their efforts).
- It illustrates that community energy groups are connected to the mainstream energy regime. They can seek out opportunities that arise when the regime changes but also sometimes have to adapt their projects. Connections with mainstream actors cannot only benefit but also hinder the developments of some projects.
- It highlights the importance for groups to increase their emotional stamina – not only to develop a community renewable energy project but also to maintain and keep it running once it has been initiated. The installation of a renewable energy system is only one step along the way in developing a successful project.
- It shows that if technical expectations are disappointing for the group they can potentially be countered with expectations regarding the process of developing projects that benefit the community. Expectations of different qualities can be mixed. They can compensate or reinforce one another.
- Finally, although community energy projects often seem to be led by tenacious champions, they often need to have a supportive and receptive community around them to maintain existing projects and set up new ones.

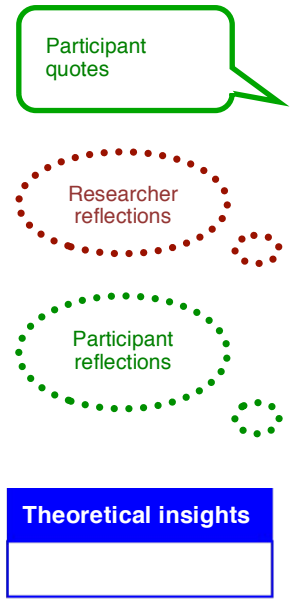


South Wheatley Environmental Trust Wind Turbine Project Timeline

The Community Innovation for Sustainable Energy Research Project

The combined pressures of climate change, peak oil and threats to energy security are increasingly seen as demanding a fundamental transition in the energy system. In this context, there has been a surge of interest and activity in small-scale, sustainable energy projects led by local communities. Examples include insulation clubs, energy awareness and behaviour change networks, and co-operatively-owned small-scale renewable energy systems. Whilst these projects have experimented with a wide range of different sustainable energy solutions, previous research has highlighted the profound challenges community energy projects face in growing, diffusing or even simply surviving. In particular, there is a tendency to treat them as marginal and parallel to mainstream energy systems and, as such, little is known about how or why community energy projects do or do not spread or grow into wider society, nor about their potential influence on wider low-carbon transitions.

The Community Innovation for Sustainable Energy (CISE) research project engages with this gap in knowledge by examining the processes under which community energy projects have spread and grown within the UK. We do this with a view to providing independent advice to policy-makers, community groups and energy businesses about the merits and processes for supporting community energy. To achieve these aims, the CISE project is undertaking a variety of research activities. These activities include working with 12 community energy projects in-depth to explore the key challenges being faced on-the-ground, the extent of networking and learning between projects, and whether this is assisting in the diffusion of community energy.



Inspired by the Institutional Learning and Change Initiative, and by Bath University's 'Lowcarbonworks' project, the individual reports on each of the 12 projects are being presented as 'innovation histories'. Unlike conventional case study reports, innovation histories aim to gather human stories of what happened during project development to provide a multi-voiced account of the innovation process. They encourage key individuals to reflect on their own actions and how they are linked with the actions of others, and making it possible, therefore, for external parties to learn from others' real-life experiences. Rather than privileging the perspective of the researcher, innovation histories are presented in a narrative format that juxtaposes quotes from core participants, the researcher's own reflections on key developments, and wider theoretical insights relating to the innovation and diffusion of community energy. These are based on accounts gathered during in-depth interviews with project members and project meetings and information gained from published materials and the project website. Participant and project anonymity has been respected where requested.

South Wheatley Environmental Trust Wind Turbine Project: An Innovation History

Bill: "They used to call me the mad new incomer in Cornwall because I could be seen with the sunshine roof of my wife's car open and this pole sticking out of it with a vertical axis wind turbine spinning as I drove along the road to see what its performance was… and rapidly discovering that vertical axis machines weren't all that efficient."

Bill: "Anyway, that's what really kicked me off I guess, when Eva came along with the parish project and I decided to have a crack at that."

Bill: "A lot of people that have been in the industry needed something to keep the grey matter going, I suppose… I was working in the offshore oil industry where I had handled projects that were two or three million pounds worth… a whole range of project technologies so this didn't scare me at all really. I think this is the most vital thing in any community effort really, you've got to get hold of a project champion who has broad technical knowledge."

Origins: Plans for a community-owned wind turbine project

The hamlet-based South Wheatley community wind turbine project was initiated in 2004. The project originated because of failed attempts to create a larger parish-wide scheme in North Petherwin in Cornwall. Power-Gen Renewables (an energy supplier) was planning to replace their wind farm, consisting of eleven 450kW St Breock (in Cornwall) wind turbines, upgrading them with eight 1.3mW machines. They offered three of the second hand turbines, free of charge, to the local council so that they could be installed within the local parishes, such as North Petherwin. In 2003 a District Councillor, Eva Paynter, and a Chairman of the Parish Council, David Polglase, saw this offer as an opportunity to develop a renewable energy scheme that could provide 'several thousands of pounds a year' for community projects in the area. Soon after, Eva got in touch with a semi-retired local engineer, Bill Andrews, who was known to build his own wind turbines and who could provide some invaluable advice regarding the technical elements of the project. Bill was immediately interested. He felt that he could make use of his knowledge in small-scale renewable energy systems and saw his participation in the project as an opportunity to address his 'guilt complex', which resulted from his involvement in the offshore oil industry during his working career. Moreover, Bill was on a 'morally-driven crusade' (based on his Christian beliefs) to 'solve the world's biggest problem to date' – climate change.

The idea was to install two 450kW wind turbines on local farmers' land in suitable high wind speed positions and connect them to the local 11kV phase grid. At the time Bill was not very used to working with the internet, so instead of searching for information about funding opportunities on websites, he called numerous Cornwall-based organisations for their support in developing the project. Community Energy Plus provided him with a list of potential granters, who could potentially pay for the feasibility study. After calling various grantees and filling in comprehensive application forms (including all sorts of supporting documentation and quotes), Bill was promised funding from EDF's Green Fund and Clear Skies (a government funding programme). However, after Bill and David had set up North Petherwin Renewable Energy Trust (a not-for-profit company), and identified two landowners who were happy to host the turbines on their property, the Clear Skies' programme organisers declared that they had already given away all of the money.

Although EDF's Green Fund provided £12,000, the Trust was still short of £10,000 to conduct a full feasibility study. After some deliberations, Bill decided to conduct parts of the feasibility study himself. During his working career he gained experience in electronic, mechanical, oceanographic and aeronautical engineering, and felt confident enough to carry out the noise study and develop all of the plans. The Trust managed to complete the Environmental Impact Assessment (EIA) and had just prepared all the documentation for the planning application before all of their efforts came to a halt. Both landowners, one after the other, withdrew their consent to locate the wind turbines on their land due to constant telephone threats to their family by a minority group who opposed the project. The famers claimed that some opponents had gone as far as contacting the Department for Environment,

During conversations with Bill, I was struck by how successful the Trust had been in gaining grant funding. Although this money was a great help to realise the project, these grants also brought with them certain requirements that shaped the development of the project, and sometimes created numerous hindrances (such as for the Trust to speed up certain decision-making processes in order to not to lose the grant funding). It must have been demoralising to be treated so bureaucratically.

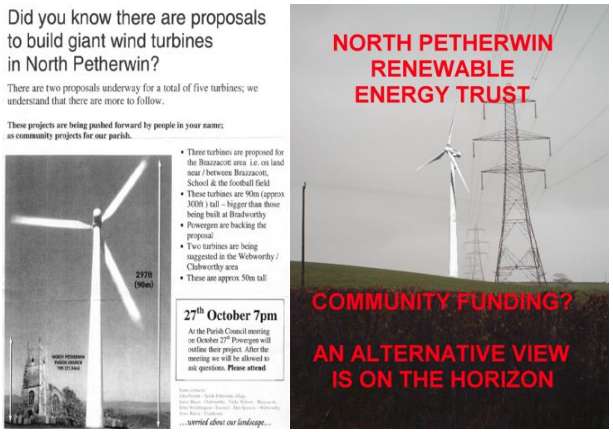
Having someone in the team with broad technical knowledge might be key for setting up a renewable energy project. But it might not only be Bill's knowledge that helped to initiate and develop the project but also his self-confidence (that he developed through previously working with the technology). Community members need to feel confident enough about setting up a project. Previous knowledge might provide this confidence but it could also come from somewhere else?

Bill: "Terrible waste really, dreadful waste [Bill felt that all the work that went into developing the project was for nothing at the time]. I've had nightmares thinking about it now."

Food and Rural Affairs (DEFRA) to make accusations (unjustified) of animal mistreatment on the landowner's farms. As a consequence, the project was stopped just before the planning application was handed to the council.

The Trust never expected such opposition to the project. When they conducted a questionnaire to gain the parish members' view on the wind turbine project a few months earlier, they received 230 replies, with 157 in favour of the project and only 67 against it out of an overall of 270 dwellings. Despite this positive outcome, a newly elected parish council voted against the continuation of the feasibility study and the project overall. Bill and a colleague, who were parish councillors at the time, were exempt from participating in the voting process because the members felt that they were too involved in the wind turbine project. According to Bill, two members of the parish council, who had never been in favour of the project were able to 'recruit people from all over the UK' who could object to the project (although they lived 100 miles away). The opponents were worried that the wind turbines would ruin the character of the parish and decrease the value of surrounding properties. At one stage the situation escalated to such an extent that a policeman had to be invited to one of the parish council meetings to maintain order between the opponents and proponents. At the end of 2003, the project came to a hold and Bill resigned from the parish council.

Bill: "They were vicious groups really in in the sense that they were into threatening telephone calls and we had two farm owners who were happy to have the turbine on their land… we were just about to put the planning application in and he rang up and said: 'I am going to withdraw from the project because I feel my family is threatened by these telephone calls'. That was appalling really, absolutely appalling. So that is the demise of North Petherwin Renewable Energy Trust."



Rising from the ashes

Bill: "The objectors are so well organised, and sometimes the supporters of wind farms aren't. But what you need is genuine local support behind it and get that support in writing."

Since then, numerous privately and commercially owned wind turbines have been installed in the parish with planning permission being approved. Although there has been some opposition towards several wind turbine projects, renewable energy has been of greater importance for the council and therefore planning permissions has been approved more readily. Bill was surprised how well funded and organised the opponent group was and what extreme measures they took to prevent project from taking place. He has learnt never to 'underestimate the opposition' and to organise exhibitions rather than public meetings in order to avoid open confrontations. Although at the time the Trust was totally out of money (having paid for a feasibility study) and the Trustees felt devastated to abandon the

The North Petherwin wind turbine project demonstrates that communities are not always coherent, and that there can be real conflicts within them. Renewable energy projects can be as much about community development processes, and navigating conflicts in order to find a common ground and build mutual understanding, as they are about techniques of renewable electricity generation.

I was struck by the fact that most of the Trustees still felt so strongly about this time, even visiting eight years later: feeling disappointed that the project did not materialise and distressed about some of the opponents' methods. The experience had such an influence on the Trust that it impacted highly on some of the decision-making processes in the subsequent community-owned energy projects. For instance, since then the Trust members have been increasingly quiet about their achievements.

Bill: ""All they [opponents] do is try and rubbish it [the project], that is the stressful bit but then you mustn't let it get you down, that's fatal really, because they've won if you do that… I don't think there was any nastiness about it but it did get us a little bit more enthusiastic to go and do something… I couldn't see all that work just wasted."

Dave: "Bill has got all of the knowledge; in fact, he helps people all over the county with any sort of energy projects because he is quite a brilliant chap."

Bill (website): "I am driven by my conscience. As a Christian I believe we will have on our conscience the death of lots of very poor people in the underdeveloped world as a result of the weather changes taking place due to the global warming our carefree energy demanding lifestyle has caused. We need to do something about it."

Griffin Family [Ray]: "If we're totally honest we were probably doing our good neighbour bit… It's Bill's baby, he's really passionate about it… And he's a good neighbour and he'd do anything for you, wouldn't he?

project, Bill was not willing to give up. Spurred on from the opposition against the parish-wide scheme, he came up with the idea of developing a much smaller hamlet-sized project in South Wheatley. Bill, David and another Trustee, Raymond Harvey, scaled down their original plan at the beginning of 2004.

David used to work as an accountant. At the time, he was keen to develop a community-owned renewable energy project to be able to invest in community development activities. When they had to abandon the larger project David was disappointed because, for him, it could have made a real difference to the parish. The proposed smaller project did not really make financial sense to him but he was keen to support Bill in his efforts. Ray is a practicing businessman and brings financial skills to the project. He is a real renewable energy enthusiast. Although both have been there from the beginning, they agree that Bill has been the real instigator and driver.

Sharing lessons

A Strategic Niche Management approach highlights the need to develop institutional infrastructures (for example, newsletters and conferences) to encourage the sharing of lessons between projects. Although the South Wheatley Environmental Trust has been keen to provide support to other groups and to share some of their lessons learnt, they have been very quiet about their project since they had to scale down their original plans (of setting up a wind turbine for the local parish). As a consequence, a lot of the other community energy groups do not necessarily know about the South Wheatley turbine, which makes the sharing of lessons extremely difficult. Some community energy groups might prefer to keep a low profile because they regard it as a 'survival' strategy in a 'hostile' environment.

Scaling down the initial project idea: A hamlet-wide community wind turbine

The smaller scale, hamlet size project had a different character from the start. All of the Trustees were close neighbours with strong religious ties and involved in the activities of the local church. Informal discussions with five householders and two farmers based in the hamlet were positive from the start, as they could see that the wind turbine would benefit the whole community. During these discussions, John McMurray (another South Wheatley resident), decided to join the group. He had an artistic background and used to work as a Costume Designer in Bristol before retiring to Cornwall. Although John described himself as a 'technophobe', he was keen to learn more about renewables, wanted to be part of such an ambitious project and valued Bill's enthusiasm. Bill's passion for the project also secured a site for the wind turbine for a 'peppercorn rent' of £5 per annum. One of the local farmers, Raymond Griffin (who also joined the project group), mostly gave up a small part of his land for the wind turbine because Bill had repaired many of his farming machines free of charge in the past and therefore Ray wanted to repay him. For the farmer's family it was about 'doing our good neighbourly bit'.

It was interesting to hear it was not only Bill's knowledge that had driven the project but also his tenacity, enthusiasm, neighbourliness and inclusive nature. Moreover, Bill felt able to act in this way because of the strong Christian ties in the local area, he felt supported from the beginning of the project until now. These pre-existing (and often non-energy related) community ties seem important when setting up and maintaining community energy projects, as they encourage reciprocity, trust and community spirit.

John: "Certainly nothing would have happened without him [Bill]. His enthusiasm is quite unbelievable and the amount of work that he puts into it… Bill is a very friendly guy, he's very sort of outward going and very inclusive and likes to share his thoughts and enthusiasm with you."

Bill: "We objected to asking people about their income and everything else to assess if the grant was really needed – whether they could afford it [energy conservation] with or without it. Means testing is a really dirty word in the country and something to be avoided at all cost."

Bill (website): "The Trust is a non-profit making company set up to provide real, tangible benefits for the community in north Cornwall in the form of energy conservation project grants. Income the Trust earns by selling green energy will go into the grant fund. It's a double whammy. We want to generate green electricity to power local homes and conserve energy through energy efficiency measures."

Instead of erecting two 450kW wind turbines, the plan now was to install one small 15kW turbine. The aim was to gain 100% grant funding to develop the project, install the turbine and connect it to the grid. Income from the sale of the electricity was to pay for outstanding development costs and start a fund from which grants could be provided to residents of the hamlet of South Wheatley and adjoining dwellings for the purpose of household energy conservation projects. The group wanted to set up the project as a charity but eventually decided against it. Although it would have made the accountancy easier, as a charity the group would need to means test the families to whom they could give grants from the income of the turbine. The group was keen to include everybody in the hamlet, regardless of their income and status, when handing out grants, and therefore decided to set up the South Wheatley Environmental Trust in July 2004. Since then, the Trust has been a not-for-profit company limited by guarantee whose objective is to 'provide real and tangible benefit to the community by using the natural resource, wind for which North Cornwall is well-known'.

This time Bill knew exactly what he needed to do to get the project to the planning permission stage. Moreover, because this was a smaller project, he was able to go around the hamlet, talking to everyone face-to-face about the implications of the project and avoiding any unnecessary confusion that might lead to people objecting to the turbine. In addition to gaining some additional Trust members, through these efforts Bill was able to get a letter of support from all of the families in the hamlet to strengthen the planning application. In the meantime Bill was also able to hand in two grant applications for the South Wheatley project to the EDF's Green Fund and Clear Skies in April 2004, collected parts of the necessary data to submit a planning application to North Cornwall District Council, and contacted Western Power Distribution for a quotation covering the grid collection.

It seems that what a community energy project is, is interpreted in different ways. One of the inhabitants in the hamlet wondered whether their turbine was really a community-based one, seeing that not all of the inhabitants were part of regular meetings and the project was regarded as 'Bill's baby'. The South Wheatley wind turbine is a community project (according to our definition) because the income from the turbine is used to benefit the local community and it is run by an elected trust, consisting of hamlet inhabitants and other nearby locals.

The South Wheatley wind turbine project demonstrates that community energy groups do not only grow and scale up their projects but also sometimes have to scale *down* their initial plans to realise it and survive.

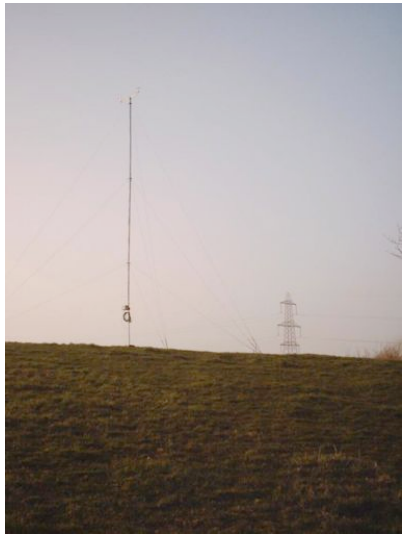
Bill (website): "We are the first village to run a community wind turbine in this way [To the best of Bill's knowledge, their project was the first community-owned wind turbine in the UK which provides benefits to the community in the form of energy efficiency grants]. I visited my neighbours and spoke to everyone personally, they all sounded supportive so we progressed with the project. There is an interesting mixture of people involved who all understand the environmental problems we face in future and want to help."

Previous contacts (that Bill had gained whilst developing the larger wind turbine project) with major renewable energy companies also turned out to be extremely valuable. They provided free advice and support to develop the energy assessment analysis for the South Wheatley project. For instance, Renewable Energy Systems (renewable energy developers) conducted the shadow flicker analysis and determined the energy yield, Hayes McKenzie (consultants in acoustics) provided help and support with the noise assessment and Natural Power (renewable energy consultants) helped to conduct the visual assessment, impact analysis. Moreover, Bill gained assistance from the Renewable Energy Office Cornwall (public/private company, encouraging the implementation of renewable energy technologies in the area) who gave an anemometer mast to the Trust so that they could measure wind speeds in the locations for about twelve months. Bill was encouraged to see how much generosity he received from large renewable companies to develop a thorough planning application, purely by explaining that they could support a community-based energy project.

I was struck by Bill's ability to mobilise help from so many renewable energy developers and consultants, gaining so much machinery and advice free of charge. I was left to wonder whether community energy projects have received as much help from the sector over the past few years. It seems that there are numerous ways in which the private sector can engage with community projects – not only through providing finance but also access to other resources, and delivering advice and practical know-how.

Learning between projects

A key challenge for community energy groups is to learn from the experiences and challenges faced by other groups. What becomes apparent when considering the South Wheatley wind turbine project is that, even between projects organised by the same group and in the same location, the application of knowledge from one project to the next is not always a straightforward process (such as from the North Petherwin project to the South Wheatley wind turbine). Examining what knowledge and experiences are transferrable from one project to the next (conducted by the same group) might provide some indication of what knowledge can be shared more widely between community energy groups.



Although at the beginning of the first project Bill knew almost nothing about how to put together a planning application for a wind turbine, through in-depth examinations of the Town and Country Planning Act, continued conversations with renewable energy companies and internet searches (including national wind speed data sites and the Carbon Trust and Clear Skies website), he was able to learn more and more about the process. Bill felt that he had to learn this the 'hard way'. It was difficult to gain information from other community energy groups because only a few wind turbine projects existed at the time. Similarly, toolkits and how to guides on how to set up a community wind turbine project had yet to be fully developed. For Bill it was very much a 'learning by doing' process, getting to know all the stakeholders involved in a planning application process (such as the Ministry of Defence, telecommunication companies and Natural England), the different energy assessment criteria and the various regulations. Whilst examining the Town and Planning Act, Bill realised that wind turbines below a 15m hub-height were exempt from a full environmental impact assessment (conducting a full EIA is a very detailed and expensive process). Even though the Trust knew that it was difficult to source a smaller turbine at the time (not a lot of manufacturers focussed on the development of small turbines), they decided to install a 15kW wind turbine (whose hub height is less than 15m), realising that they would not need to conduct a full EIA and would be more likely to gain planning permission. In September 2004 the planning application for the wind turbine was approved with only one objector (a person who lived 100 miles away from the turbine).

It was interesting to see how Bill fully engaged with all aspects of the project (even where he had no previous knowledge), always trying to find loopholes that would make the development of the project easier and cheaper. Since finding a 'loophole' in the Town and Planning Act, Bill has told numerous farmers about it so that they could develop their own wind turbine project, helping not necessarily community energy projects to grow and spread but renewable energy projects in Cornwall.

Gaining funding for the project

At the start of 2005 the Trust members became increasingly concerned about the difficulty of gaining funding for the project. A grant application had been submitted to Clear Skies, but they had advised the members to get 50% matched funding so that they would be eligible for this fund. EDF's Green Fund was one source that had promised a grant towards the project but the amount would not come up to 50%. Bill was persistent and kept on filling in numerous grant applications, including Scottish Power and the Esmee Fairbairn Foundation, and entered an ITV South West competition. A backup plan was to take out a loan with the Co-operative Bank; the Trust had been in contact with the bank since the beginning of the previous year, and they had indicated that they might provide a loan to the Trust. In March 2005 the project was shortlisted by the judges of the ITV's Westcountry Community Challenge. They were given a live broadcast in which the audience could vote for the final winner of £10,000 prize. Even though the Trust did not win, they gained a runner up prize of £1,000 as Best Community Project. As the Trust obtained some match funding and publicity, EDF decided to increase their grant to the project in June 2005, raising the overall fund to 50%. This increase meant that the Trust was also eligible for the Clear Skies funding programme, which meant that all grants were approved in July 2005 and a bank loan would not be necessary. Scottish Power denied a grant to the project because the panel had 'reservations with regards to the potential for individuals to benefit from the project'.

Peter Hofman, EDF Energy's Director Sustainable Future (EDF website): "This Cornish hamlet will be breaking new ground by selling renewable energy from their own community wind turbine to support energy conservation in the local community. The wind turbine will symbolise this hamlet's commitment to reduce its environmental impact and provide practical benefits for the local community for years to come."

Getting grant funding looks really complicated, with many interdependencies between them, adding to the uncertainty of the project (such as match funding at 50%). Timeframes and synchronising everything, including ordering the turbine, looks like quite a headache, especially when there is the need to maintain group morale and neighbours' engagement.

In addition to obtaining funding for the project, the Trust needed to arrange the lease agreement (for the plot of land on which the turbine would be installed), choose a wind turbine manufacturer and plan the grid connection. The Trust had already received a model lease agreement from Renewable Energy Systems for the larger wind turbine project. They asked a solicitor to change it only so that it would correspond with the purpose of their project. Bill was annoyed when he heard how much the

solicitor wanted to charge the project for these 'minor modifications'. The Trust decided not to proceed with the solicitor but rather to customise the lease agreement themselves. Choosing a 15kW wind turbine turned out to be a slightly bigger issue as at the time only a few options for turbines were on the market. After some long deliberations, the Trust chose to go with a manufacturer with a good track record, Proven Engineering, whose 15kW wind turbine had a robust reputation in the trade. Although they ordered the WT15000 turbine (9m rotor hub height and 15m tower) in June 2005, and received the foundation kit for installing it in August, Proven was so busy at the time that they set the turbine delivery date for the beginning of 2006 and not earlier.

Another (shorter setback to the project) occurred when the farmer's cattle bent the lower section of the wind anemometer mast and toppled it completely a few days later, interrupting the wind speed measuring analysis.

Scaling up?

Strategic Niche Management often assumes that projects (and in this case a collection of community energy projects) aspire to grow and spread to develop a robust niche. The South Wheatley wind turbine project demonstrates that groups sometimes have to scale down their project to succeed with it. The Trust had everything set up to realise a bigger project but, because of external constraints, had to put it on hold. Within community energy the scaling down of projects is not necessarily a failure or disappointment, it can be a positive adaptation required to survive. Some groups might not even have the ambition to grow and spread their efforts. It is important to consider the developments of individual projects (even projects that have to be put on hold or scaled down), as they shape the development of the niche.

The turbine arrives – eventually

In March 2006 Bill received a letter from Proven informing them that they had identified a 'potential design issue in one of the components of the 15kW wind turbine'. After testing the turbine on the Shetland Islands under extreme weather conditions, the engineers noticed premature wear and tear on some of the parts of the turbine. Although they had already found a solution for these technical issues, the company was keen to test them thoroughly before installing more turbines. Proven advised the Trust to delay the installation of the wind turbine until 2007 unless they had some strong reasons for needing to install it earlier, offering a compensation of £2,000 per year on a pro rata monthly basis. Bill was disappointed. He informed Proven that although it would be better to incorporate the modifications before installing the turbine, the funding timescale would not allow a delay in installation. The Clear Skies grant availability would have ceased to exist in December 2006, requiring the installer to sign the commissioning document by the end of the year, otherwise they would have lost the funding. After a lengthy delay and numerous reminder letters from Bill, Proven responded with an installation date of the 5 September 2006 for a modified 15kW turbine. The Trust accepted this delivery date, but reminded Proven that there had been a five months' delay based on the original promise (made at the beginning of 2006) and that the project should get a price reduction of £830 (overall project costs: £45,000).

When considering some of the community renewable energy projects that are currently being developed, it seems that groups regard it as crucial to get professionals to look over various aspects of their project. The decision to adapt existing contracts seems rare. This might indicate a certain professionalisation of the sector that may bring certain advantages (such as creating a 'robust' project that holds up financially and legally) and disadvantages (such as discouraging a level of risk-taking).

When it comes to turbines, it seems there are few reliable small-scale technologies available to community groups. They have to be technology takers, rather that influencing technology design (although Bill tries to do so later!). Although Bill would probably be able to develop the technology (and during one of the interviews states that he should have done so), his main interest was in applying the technology rather than developing it.

Finding a utility to buy the electricity to sell on, i.e. a wholesaler, also proved to be more difficult than they first thought due to the fact that companies such as EDF Energy, Scottish Power and British Gas had not set a renewable obligation (RO) tariff for medium and small sized turbines at the time. They only received a quote from Good Energy with which they arranged a rate of 7.5p kilowatt-hour, including ROCs (Renewable Obligation Certificate), LECs (Levy Exemption Certificate) and REGOs (Renewable Energy Guaranteed of Origin). Even setting up insurance for the wind turbine turned out to be more complicated than Bill anticipated. Most of the existing clients for medium and small sized turbines were farmers who could add it to their National Farmer Union insurance policy. Bill felt that the South Wheatley project was 'breaking new ground' in this area. The Trust members felt that a full insurance policy, including accidental damage and lighting strike damage was too expensive for the project. They decided only to set up a third-party public liability insurance policy. In July 2006 everything seemed to be arranged to start with the hands-on installation of the turbine.

The excavation of the foundations for the wind turbine and pouring of the concrete in July 2006 was a real community effort. The farmer and some of the other local families provided some of the machines needed to dig the pit for the foundation and tip in the concrete. Bill designed and manufactured parts of the foundation structure, and some of the other trustees offered their support and made cups of tea. The concrete pouring was a nerve-racking but also exciting moment for the Trust. After the delivery and installation of the substation, the cable that would feed the electricity from the turbine to the substation was laid with the farmer's cable burying machine. The plan was for the turbine to feed power into the local low voltage (230v) grid, offsetting the power flowing down from the high voltage (11kV) grid and reducing the demand on the distant generator. Although there was a slight delay (because an existing water pipe got accidentally damaged when burying the cable), everything was set up for the wind turbine to arrive in September 2006. On the 5 September after unloading all the parts of the wind turbine, Bill realised that Proven had supplied an unmatched set of blade attachment brackets: this cost the Trust another three days. At the end the bolting down of the turbine and its erection took less time than manoeuvring the turbine around the narrow street lanes of Cornwall.

It was interesting to see how numerous aspects of the South Wheatley wind turbine project were interlinked with each other (such as installation and funding deadlines), making it an increasingly more complex project, in particular if things did not work out according to plan (such as the late arrival of the turbine). The Trust did not seem to be too stunned about these complexities. They just kept trying to work things out.

I was amazed by Bill's engineering knowledge. With great enthusiasm he told me about the mechanics of the turbine, using lay terms and descriptions so that I could follow him. His knowledge was so unlimited that I felt sometimes felt dizzy from all the technical descriptions. It must be near to impossible to find someone with so much technical knowledge in every community. Still, it is more than likely that it was not only Bill's technical knowledge that helped to progress the project but also his enthusiasm, project managing experience and tenacity.

I was struck by the fact that the South Wheatley wind turbine project was 'breaking new ground' in relation to numerous aspects of the project at the time – setting up the finance and insurance and sorting out legal and technical issues. The context in which these projects were being set up seems to be very important: existing knowledge in the location, funding structure, technical developments etc.

The Trust only had a small audience when installing the wind turbine. ITV wanted to film parts of the installation to show its viewers what became of the community project that entered their competition. Overall the group kept the installation fairly quiet in case they (a large group of opponents) decided to attend the event. The previous negative experiences were still in their mind, but they were happy that the turbine was finally installed and generating electricity into the grid. The Trust was able to commission the turbine in September 2006 and gained accreditation for the generation station from Ofgem two months later.

Bill: "Bishop Bill asked us all to gather round the base of the turbine before commencing a short introductory talk during which he made the point that 'earth's energies'… He congratulated the residents of the hamlet for their efforts in achieving a reduction in the effective carbon dioxide emissions from the hamlet resulting from their turbine's contribution. Rev Geoffrey led those present in the Lord's Prayer and finally Bishop Bill asked everyone to join hands around the turbine's tower. On so doing it was noted, rather eerily that it increased its speed as we did so!"

A real highlight for all of the Trust members, and a sign of achievement, was a dedication service at the turbine conducted by the local Bishop. On 28 October Bishop Bill and Fr Geoffrey Pengelly blessed the turbine and flicked the switch 'to a greener future' of the hamlet.

Connected to the regime

In the past, academic researchers (concerned with Strategic Niche Management) have regarded radical innovations as somehow separate from the mainstream markets, cultural trends and policies. The South Wheatley wind turbine project demonstrates that community energy groups are connected to the mainstream (such as to energy regimes, including, for example, renewable energy manufacturers). Community energy groups can seek out opportunities that arise through regime changes (such as the development of a more reliable small wind turbine) but also have to adapt their projects if these changes make the development or maintenance of their project more difficult (such as the occurrence of wider technical issues with the turbine).

John: "So there have been down times when, you know, you got very depressed. Last September was probably the lowest point when some of these turbines were damaged up in Scotland during the very severe gales…"

Technical problems with the wind turbine

The wind turbine did not generate electricity for long. In November, Bill received a phone call from Proven, asking the Trust to shut it down. One of their turbines had shed a damper unit, caused by a fatigue failure of the damper fixing bolts. Nobody got hurt but the damper unit came off near a school, resulting in the company being extra precautionary with their other turbines. They decided to radically change the design of the component before fitting them to all of their preproduction 15kW machines. In the meantime, Proven asked all of the owners to temporarily shut down their turbines as a safety measure.

Bill: "We were advised by the manufacturer that a turbine of that type adjacent to a school had thrown one of the blade damper units off so please shut them all down. So we did just that and whilst it was shut down we inspected ours and as far as we could see there was nothing wrong with it. So I undertook a risk analysis to see how far these damper units would be thrown and it wasn't as far as the road."

The Trust was surprised about the company's suggested measures to shut their turbine down. The failed turbine had amassed considerably more running hours than the South Wheatley one. Moreover, after Bill conducted a risk analysis (covering potential damper attachment failures, partial blade breakage and the possibility of a blade detaching at the root), they realised that at worst case calculations the damper unit would not travel more than 35m. Since the nearest point to the wind turbine (the road) was over 60m away, the Trust members could not understand why they needed to shut down their turbine. They wrote a letter to Proven to that effect and asked them whether they could get any compensation if they complied with the measure. The Trust was extremely disappointed that problems occurred with the wind turbine at such an early stage, in particular when choosing a manufacturer with a good track record of reliable machines. Over several years, Proven manufactured 600w, 2.5kW and 6kW machines before including a 15kW turbine. According to Bill they had an extremely good reputation with regards to their existing turbines and the Trust was able to visit some reference sites (with 6kW machines) before purchasing the turbine, but the company must have had some unforeseen issues when scaling up their machines.

Planning: "If the turbine fails to generate electricity to the local or national grid for a continuous period of six months then, unless otherwise agreed in writing by the local planning authority, the turbine shall be dismantled to ground level, removed from the site and the land restored to its former condition."

After sending the first letter to Proven and not receiving a reply, the Trust became increasingly anxious about the consequences of a potential shut down. One clause in the planning permission clearly stated that if the turbine fails to generate electricity for a continuous period of six months then the local planning authorities could ask for it to be dismantled. Although Bill agreed that 'matters of safety must take priority' on this occasion, the prospect of dismantling the turbine based on precautionary measures was frightening for the Trust. They sent another letter to Proven, asking about the consequences if they let the turbine run, the compensation situation and potential length of the repair time (whilst attaching Bill's risk analysis). At the time, the turbine continued to produce

This must have been a tricky decision (keeping the turbine running or not). I am not sure whether a lot of community renewable energy projects would have taken the risk to keep it running (in case any safety issues might occur). It probably required a person like Bill (with enough engineering knowledge) to convince the Trust that it was safe to keep the turbine running (even if it meant to going against the manufacturers' recommendation).

electricity at a reduced output of 12kW but needed to be shut down whenever wind speeds exceeded 50mph. The Trust members were hoping that they could leave all these troubles behind them in 2007 but the problem with the turbine's damper unit was only the first technical issue in row of many to follow.

The installation of the new component in March 2007 never materialised. Instead Proven offered to retrofit 6kW blades to the South Wheatley machine to keep it running and provide some compensation for the missed income. Bill was sceptical of retrofitting 6kW blades to their turbine and was wondering whether in the event of a mains outage (in very strong winds) the turbine would over-speed and in the process damage the inverters. In late August 2007, in Kilkhampton, one of the owners of a 15kW turbine that had the 6kW blades attached experienced such over-speed problems. Bill helped the owner, by getting together with a few people to discuss the topic. He designed a part for the turbine that would diminish these problems and also sent his designs to Proven, but nothing really came out of it. On a more positive note, in 2007 the South Wheatley Environmental Trust won the 'South West England Green Energy Awards' (organised by Regen SW) for 'Best Sustainable Energy Community', had press coverage in the 'Western Morning News' in October and November, and was interviewed as part of a research project organised by the Cornwall Wildlife Trust and The Co-operative Group.

John: "Basically what I am trying to say is that with somebody like Bill who can actually get enthusiasm from other people and get them all working together as a combined force just makes something work in a way that, you know, if you were a single owner of a single turbine it would cost you ten times as much. You would not have knowledge and goodwill of all those other people. So he's been very good, has been excellent at actually instigating all of that and keeping the whole thing together."

Throughout 2008 the non-arrival of the promised new blades and dampers slowed down the generation of electricity. In fact the Trust was asked to shut down the turbine once more by Proven in April 2008 when a 'blade-coning angle restraining link' failed. The Trust had to wait until September before the replacement blades and damper assemblies were fitted. Although the turbine should have run smoothly after these repairs, soon after installing the components the turbine developed a bearing failure. This meant that the turbine had an additional shut down period from September 2008 to May 2009. In order to switch the turbine back on Proven had to install a new head for he turbine. The company was still unsure when this installation could take place.

Creating networks with regime actors

A variety of regime actors can potentially provide support to community energy projects and even go into partnerships with initiatives. These regime actors are regularly motivated to support community energy projects to meet various regulatory obligations or to fulfil their own organisational interest (such as improving the companies' CSR reputation). It is still unclear how these liaisons will shape the community energy niche, considering the differences in motives and resources between the community energy groups and regime actors. Connections with regime actors can benefit the development of some community energy projects but also hinder them.

Poor financial performance but finally technical issues get fixed

In April 2009 the South Wheatley Environmental Trust hoped to increase their income through the arrival of the double Renewable Obligation Certificates (ROC), and later on through the introduction of the Feed-in-Tariffs in April 2010. They could gain a bit more incomes through an increase of the ROC

but at the time were unsure whether their project would be eligible for the Feed-in-Tariffs. The hope was to increase the income to such an extent that they might be able to save up for a larger turbine, seeing that the current one caused them so many technical issues. However, in April 2010 Bill realised that wind energy projects that started before the 16 July 2009, would only receive a fixed payment of 9p per kWh (under the Feed-in-Tariff) rather than 26.7p per kWh when installed after that date. Bill felt that early 'pioneers' were extremely penalised through this decision and started to respond to numerous consultations organised by the Department of Energy and Climate Change (DECC) to reconsider this development of the Feed-in-Tariff. In the end the Trust transitioned over to the Feed-in-Tariff, and from then onwards received 9p per kWh (and an export tariff of 4.9p per kWh); that was close but a slightly lower amount of money than they received through the double ROC.

Bill: "A real kick in the teeth for those who chose to pick and pioneer the technology."

This lower income was a worrying prospect for the project, and the compensation Proven had provided to the Trust was only minimal. Although the Trust had never been in debt to the bank, for the last two years of running the project it had made a loss, considering the income gained and current expenditure. The Trust members were hoping that they would gain more income through the wind turbine, but because of unforeseen technical problems this was not the case. The situation slightly worsened once it became known (in the summer of 2010) that Proven was going into receivership, following a manufacturing defect in the company's 35-2 wind turbine. Kingspan Limited bought the company but they did not accept any liability for the turbines. As a consequence, the Trust lost the four-year warranty benefits, which was very disappointing for them. They were lucky that Proven had finally installed the new head for the turbine in August 2010 just before they went bankrupt.

John: "The company has gone bankrupt so there is no liability from their point of view to put anything right but Bill, as always, found out that was wrong with the ones that failed in Scotland and then worked out, you know, what we should do to make sure the same thing doesn't happen here… taking various clever ultrasound type measurements…"

Naturesave (the Trust's current insurer) heard about the failure of the P35-2 turbines and were unsure whether they wanted to continue their policy with the Trust (or whether to raise the costs). It took Bill a lot of convincing, including numerous technical and risk analysis to satisfy the insurer and continue with the current policy. Bill still had some left over specialist tools from his time as an engineer and was able to now (and in the past) conduct several tests on the wind turbine himself (and in this case some non-destructive testing (NDT) and risk analysis) to convince the insurer that it would be safe to keep the current policy running.

On reflection most of the Trustees felt that during the first few years, most of their meetings were spent discussing the mechanics of the turbine. Since the exchange of the head and settlement with

What became apparent when listening to the South Wheatley wind turbine trustees was that the installation of a wind turbine had only been the first step in the development of a successful community energy project. It seems that it is difficult to say when a community energy project is complete or successful, seeing that coming up to the point of installation is only one of the first hurdles a community needs to overcome to progress their project. After the installation, the Trust needed to deal with various technical issues and the administration of the grant scheme.

It seems that community energy projects sometimes have to rely on the goodwill of mainstream actors to progress their project, considering that the wind turbine manufacturer only replied to the Trust after several attempts to contact them. Their project might be considered as being too small by the manufacturer to have any real relevance for the company.

Ray: "People probably think it is a sweet little arrangement here: a community project run by Trustees but, you know, I take my hat off to Bill, I mean it has to be run like a business because if it was not run like a business it would not happen."

the insurer, the Trust has been able to concentrate a bit more on the overall project. They decided to retain some of the capital so that they would be able to respond to another turbine failure, seeing that they no longer had a warranty. Some of the more business minded trustees pointed out that although it is a community turbine run by a trust the project needed to be 'run like a business'. They were conscious of the fact that they did not want to arrive at a situation where they would not be able to pay their bills, going into liquidation. Between 2007-2012, the Trust had given away around £5000 worth of energy conservation grants. After the repair works in August 2011 they were able to expand their grant scheme to the areas of Maxworthy, Caudworthy, Trosell, Clubworthy, Copthorne, Brazacott, Billacott and South Wheatley.

What does it actually mean to run a community energy project 'like a business'? Is it about finances? Is it about professionalization? Is it about the governance of projects? What does this view add to the sector, but also how does it change it?

Emotional stamina - keeping projects running

Theories of Strategic Niche Management say little about the need for emotional stamina to develop and run projects. The South Wheatley wind turbine project demonstrates how crucial it is for groups to adapt to, or await, changes to the regime (such as technological developments in the wind turbine sector), and also to show tenacity to deal with these changes and create a sense of stability within the group. The Trust had to demonstrate this not only when they developed the project but in particular when they had to run and maintain it. The installation of a renewable system seems to be only one step along the way. Strategic Niche Management needs to consider that a niche is not only formed through growing and spreading individual projects, but also needs to be maintained by keeping individual projects alive.

Rachael (Grantee): "In fact it's brilliant now because all of our appliances are triple 'A' rated now which makes a huge difference, and there is no way we would have been able to afford them without the fund."

The South Wheatley grant scheme

The turbine was out of action for almost half of the first three years. In an ideal world the turbine should have produced about 30,000kWh per year (70% of the hamlet's energy consumption), but up to 2009 the South Wheatley turbine had only produced 45,000kWh. Nevertheless, since 2007 through the ROCs, LECs, REGOs and compensation money from Proven, the Trust had received a small income from the turbine that was able to finance energy conservation projects for the hamlet inhabitants through the Trust's grant scheme. As a result of the numerous technical problems with the turbine, the Trust never really had enough time to think about the various practicalities of their grant scheme. At the beginning they developed some basic guidelines for the grant application process: a) An application must be made before the energy conservation project commences; b) Grants are strictly for household projects; c) The Trust members review the application and vote whether it is granted, and d) The minimum grant is £50 and maximum £500.

Celine (Grantee): "It was a couple of hundred quid, I think, towards a boiler, a combination boiler, an energy efficient one… I've just heard about it word of mouth…"

Although they produced some clear guidelines for grant applicants, the Trustees did not really know what they would do if they had too many or not enough applicants for the grant scheme. The uptake of the scheme (particularly at the beginning) was rather slow so that the Trustees did not have to refuse any applications. Although Bill felt disappointed about the slow uptake, the Trustees were also relieved because the turbine so far had not produced a lot of income to put into the grant scheme. They were hoping that people would make more use of the grant scheme as more and more people would became aware of its existence. Since 2007 the Trust was able to finance numerous energy conservation projects, including handing out low energy light bulbs, financing a double glazed door,

Setting up a grant system seems to require quite different skills from developing a renewable energy project. Who would have thought that finding people who want to apply for financial support for an energy conservation project would be so difficult?

John: "We haven't been overburdened with the problem of 'goodness gracious we've got £10,000 and we don't know what to do with it'. Things like insurance and all the running costs and so on have to be paid…"

Bill: "To date we have provided grants for low energy bulbs, low energy washing machines, more efficient boilers and improved insulation. I feel sure that other local hamlets could take up similar projects and make a worthwhile contribution to carbon footprint reduction at a local level."

Bill: "All the planning application side apart from the churchy bits of it associated with the DAC, and the faculty of course, and the requirement for all the civil engineering stuff, which we didn't require for the other one, but certainly the rest of the planning procedures were and the ability to put a decent grant applications together because it's a bit of a skill, as Peter knows, because he's done a lot."

Bill: "Found out there were a lot more but they weren't necessarily grants which were associated with renewable energy, they were just community grants. So if you broadened that horizon to just look at community grants you can do a lot better but just widen the list of potential grantees really I suppose or grant sources I should say."

an eco-boiler, a low energy washing machine, a wood burner and external wall insulation, and paying for educational project in the local school.

A grantees' story: The church turbine

The South Wheatley Environmental Trust awarded one of the more unusual grants to the local St Paternus church in North Petherwin in 2008. The grant paid for a study to consider the feasibility of installing a 750w micro-wind turbine on the church's tower. At the time Bill (who was already a parochial church councillor (PCC)) was asked to become the environmental champion for the local church. His idea was to install a small wind turbine (not bigger than a flag) on the church's steeple (tower) to hopefully cover its energy consumption costs. This time around Bill felt that the whole process of setting up the project had become a bit easier because he had learnt a lot from the South Wheatley wind turbine project. Although he had to engage with additional actors (such as the Diocesan Advisory Committee) during the planning application process, and deal with a changing funding landscape (Bill started to look further afield towards community project funding because some of the renewable energy grants had dried up), he knew how to write and submit a decent grant and planning application (he also received help from Peter Luscombe (the treasurer for the PCC) who had been extremely successful in gaining grant money for the church).

Ultimately, the church wind turbine project gained funding from the 'Awards for All Lottery Fund', 'The Princes' Benevolent Fund' and the 'Low Carbon Building Programme'. Bill also received a small amount of funding from the South Wheatley insurance company, Natursave. As part of the planning

Although quite a few unforeseen problems occurred during the development of the South Wheatley wind turbine project, Bill's enthusiasm for setting up another project did not seem deterred, considering that he took on board a project with even more variables and complexities.

Peter: "Getting grant money is not easy but we were lucky."

Peter: "We had a new architect and he went up there with Bill and he came down and he said you've got to close the church. He said the battlements there, I can rock two tons of stone backwards and forwards and he said it would slide down. So we closed the church for a fortnight until we had it taken down and then we were about a year or two getting grants for that… before Bill could put the foundation for the turbine there.

process, the project was sent to the Diocesan Advisory Committee (in addition to other stakeholders) to see whether they would support the endeavour. They stipulated that the mounting arrangements for the turbine on the tower needed to be fully stressed and approved by a qualified civil engineer. Bill conducted the necessary technical designs for this special load distribution frame to minimise the effects of the turbine on this ancient building. A civil engineer approved the designs within a few weeks after only a few alterations. In addition to dealing with the wind turbine related aspects of the project, the structural integrity of the church tower needed to be checked by an architect. Unpredictably, a visit from the architect led to a big shock for the project and the church. The architect discovered some major defects to the tower and decided to close down the church until the repair work was completed. Over two weeks the wall had to be taken down in order to reopen the church but it took another one and a half years to find grant funding for the repair work and continue with the wind turbine project.

It seems that community energy projects used to be able to fully fund their projects through grants but had to pursue various funding streams to do so. Each funder had their own application process and requirements so the more funders that financed a project the more complex it got.

Bill was disappointed about this long delay but in the end it brought some advantages to the project. In order to rebuild the east wall, the contractors required some scaffolding and a small crane. This equipment came in handy when Bill planned to lift up the heavy beams of the mounting structure for the wind turbine to the top of the tower. Otherwise, they would have needed to go up a narrow spiral staircase that was difficult to climb even without any materials or equipment. Since the end of 2010 the turbine has been up and running. Despite its success the future of the church wind turbine is uncertain. The turbine manufacturer's published generation statistics were too optimistic at the time. Although the wind turbine has qualified for the Feed-in-Tariff (34.5p per kilowatt-hour together with the export tariff), it has been producing 40-50% less energy than predicted, decreasing their income (an average power output should generate 1,000kwh per year which represents just over 40% of the church's consumption). Moreover, there have been some local complaints about the noise levels. The future of the wind turbine currently is up for discussion with the possibility that it will be decommissioned. Bill and Peter need to work out the finances of the project and hear what the locals have got to say.

Bill: "I have been up there in the middle of the night, I'll tell you Sabine, pouring with rain and horizontal rain and a torch and winding the brake on carefully to make sure that I didn't overstretch it."

Expectations in niche theory

Expectations can take different forms. The South Wheatley wind turbine project demonstrates that if technical expectations are disappointing for the group (such as manufacturer's output measure not cohering with actual ones) they can potentially be countered with expectations regarding the process of developing projects that benefit the community. Expectations of different qualities can be mixed. Moreover, they can compensate or reinforce one another. The need for expectations to coexist alongside each other, and their re-evaluation over time, is often not acknowledged in most of the Strategic Niche Management literature. The literature reflects on the success of a niche (numerous projects) rather than on individual projects, and highlights the importance for a niche to develop precise and broadly accepted expectations that firm up over time. Most community energy groups struggle to develop such precise expectations.

Adam (local farmer): "Bill is very good at that and he has made himself known throughout the county, which the powers that be and the people do know about him and he does a lot, because he is able to do a lot of calculations that are necessary for things like planning permission, because if you want to put up a wind turbine you've got to produce all sort of clever calculations as to the wind speed, as to the noise that it would create, etc."

Bill becomes an 'involuntary' renewable energy advisor

Since undertaking the South Wheatley project, Bill's time has been taken up by enquiries from farmers and landowners in Cornwall to help them with their renewable projects rather than from other community energy projects. He has not had any formal contact with any other groups but might have come across them when giving lectures at numerous events or conferences (such as for Good Energy or at a community energy event in Oxford 2010). Most of his interactions with the renewable world outside Cornwall happen nowadays via the internet, having used it regularly and now feeling rather confident with it. Most of the help that Bill provides is to farmers based in Cornwall (such as a farmer group called Atlantic Renewables).

Bill has never advertised his services so most of the enquiries to provide his advice have come through word of mouth. There is so much work that Bill could easily employ another person to help him but he just has not got enough energy to train someone. Ideas developed to set up a renewable energy consultancy group with three other people based in Cornwall, but Bill has been so busy that nothing has really materialised yet. He regards such support as incredibly important because the

Bill has grown to be an 'under the radar' intermediary who shares his knowledge and learning on a one-to-one basis rather than through any formal organisation or networking processes. Although Bill has been invited to speak at community energy events and interacted sporadically with other groups over the internet, he has mainly provided support to people locally (such as farmers). I am wondering whether there is a way of supporting Bill so that community energy groups can benefit from his experience and knowledge more widely.

demand for renewables has increased over the years, bringing with it not only experts but according to Bill also a lot of 'cowboys'.

One-man show?

The South Wheatley wind turbine project really demonstrates how community energy groups sometimes have to adapt, or await, changes to the wider context in which they develop (such as the funding landscape, technical developments led by suppliers and the introduction of Feed-in-Tariffs). Moreover, the project shows that groups need to create a sense of stability within the community (to withstand some of the occurrences), including a tenacious champion but also supportive, patient neighbours. Over time the members of the South Wheatley Environmental Trust and local farmers might not have been able to keep up with Bill's knowledge and skills but have grown in confidence to manage and set up their own renewable energy projects. Although community energy projects often seem to be led by tenacious champions, they need to have a supportive and receptive community around them to maintain existing projects and set up new ones.

Lessons learnt

Whilst talking at renewable energy events, Bill has pointed to numerous lessons learnt that derive from setting up a community energy project and keeping it going over several years.

Here are just a few:

- Do a rapid initial feasibility study to ensure no absolute stoppers
- Obtain grant money commitments in writing at all times
- Ask the council for a pre-screening report
- Discuss in confidence with planners early on
- Check whether there will be tough opposition from the following organisations: Ministry of Defence, Civil Aviation Authority, National Air Traffic Services and OFCOM

The South Wheatley wind turbine project really demonstrates how community energy groups sometimes have to adapt, or await, changes to the wider context in which they develop (such as the funding landscape, technical developments led by suppliers and the introduction of Feed-in-Tariffs). But the project also says something about a necessary stability within the community (to withstand some of these occurrences), including a tenacious champion and supportive, patient neighbours.

- Hold exhibitions not public meetings – limit attendance to locals if possible
- Persuade supporters to put it in writing
- Get landowners to draft a lease agreement as soon as possible

It is difficult to see what the future holds for South Wheatley's wind turbine. The turbine might run without any further trouble for several years. The Trust might raise some finance to replace the current turbine. But then one thing is for sure, that Bill will do his best to keep the project running to provide energy conservation grants to the local area and provide his support to numerous renewable energy projects in the North Cornwall area. His tenacity, enthusiasm and sheer technical knowledge seems to be endless.

Since writing the innovation history, Bill has told me that the South Wheatley Wind turbine has had an ultrasonic non-destructive test to check the turbine shaft with positive result, and complaints about the church turbine noise levels have lessened over the last few months. Both projects continue to produce electricity whilst benefitting the local community.